X25 EVO Controller

Product manual

2025-10-25

CUAV Tech Inc.,Ltd

Disclaimer

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Online documentation

Please visit the CUAV docs for detailed tutorials and firmware downloads of this product: http://doc.cuav.net

Download ground control station

LGC Ground control
https://dl.cuav.net/en/software/lgc.html

QGroundControl
https://docs.qgroundcontrol.com/en/getting_started/download_and_install.html

Mission Planner:
https://firmware.ardupilot.org/Tools/MissionPlanner/MissionPlanner-stable.msi

Parts List

Hardware specifications

Basic Parameters	
Processor	STM32H7 Arm® Cortex®-M7 480 MHz
Version	X25 EVO
Acce&Gyro	IIM-42653 × 2
	Gyro Sensing Range: ±4000°/s
	Accel Sensing Range: ±32g
	IIM-42652
	Gyro Sensing Range: ±2000°/s
	Accel Sensing Range: ±16g
Compass	RM3100

Barometer	TDK IPC20100 / Bosch BMP581
Port Type	
PWM OUT	16
Power IN (CAN)	2(5055670871-5055650801)
GPS Port	2
TELEM Port	2
UART4 Port	1
RC IN	1 (PPM / SBUS / DSM ,etc.)
DSU Port (Debug)	1
Ethernet (ETH)	1
CAN Bus	CAN1 × 3
	CAN2 × 2
SPI6 Expansion	1
ADC 3V3	1
ADC 6V6	1
USB Port	1(Type-C)
I2C Port	3
RSSI Port	1
Power Module	PMU 2 Lite
Electrical and Mechanical Data	
Input Voltage	USB: 4.75V ~ 5.25V
	PMU 2 Lite: 20V ~ 70V
	Power: 10V ~ 18V
Operating Temperature	-20℃ ~ +85℃
Size	76.5 × 45.45 × 32.2mm
Weight	110g

Support firmware

X25 EVO controller runs perfectly with ArduPliot 4.6.3 and above firmware.

Firmware and source code

X25 EVO supports PX4 and ArduPilot firmware. The compiled firmware is:
Download and write firmware tutorial:
https://doc.cuav.net/controller/X25-EVO/zh-hans/

If you want to modify the code; you can download the source code through the link below
ArduPilot Github
https://github.com/ArduPilot/ardupilot

PX4 Github
https://github.com/PX4/PX4-Autopilot

Compile firmware command(ArduPilot):

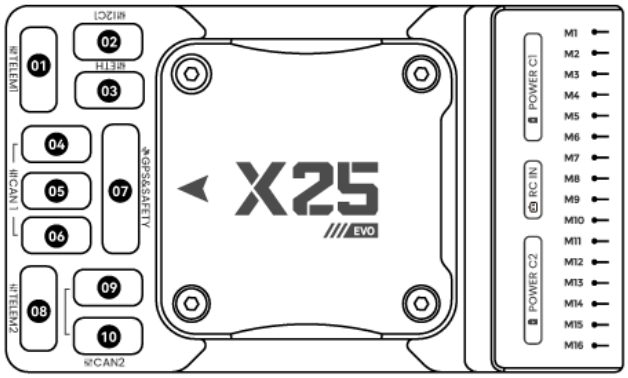
```
./waf configure --board CUAV-X25-EVO    //Compile X25 EVO branch firmware
./waf copter --upload                   //Write the firmware to the controller
```

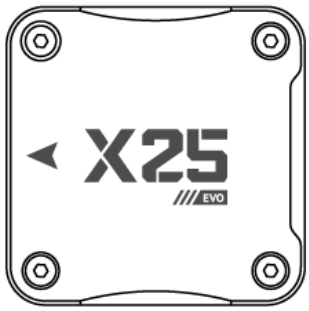
Compile firmware command(PX4):

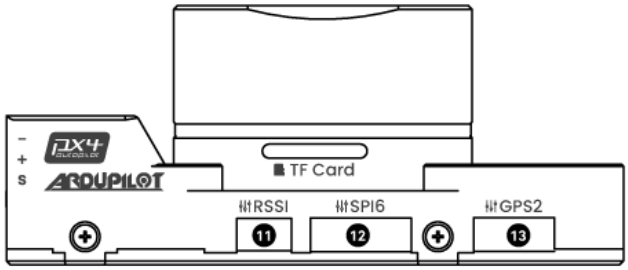
```
make cuav_x25-evo_default               //Compile X25 EVO branch firmware
```

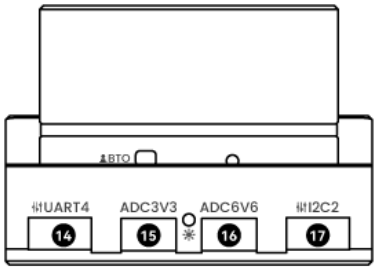
Pinouts

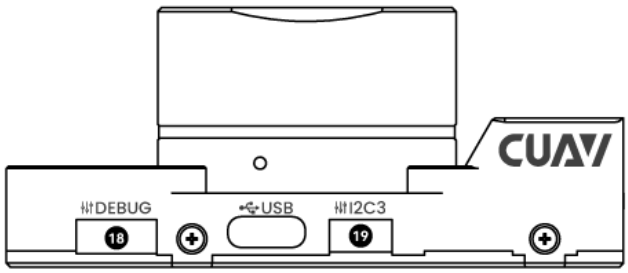
The X25 EVO interface is designed using the Pixhawk standard pinout. This may be incompatible with other interface definitions or cables. Please carefully read the interface specifications and use the original product wiring. Any damage to the device caused by wiring that does not follow the interface specifications is the user's sole responsibility.

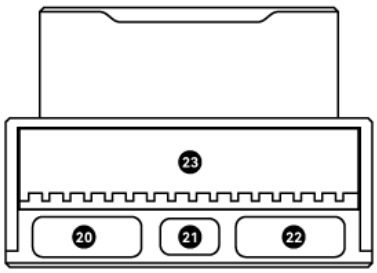

01
02
03
04
05
06
07
08
09
10
TELEM1
TELEM2
CAN1
CAN2
GPS&SAFETY
X25
EVO
POWER C1
RC IN
POWER C2
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
M13
M14
M15
M16


X25
EVO


TF Card
RSSI
SPI6
GPS2
11
12
13


BTO
UART4
ADC3V3
ADC6V6
I2C2
14
15
16
17


CUAV
DEBUG
USB
I2C3
18
19


23
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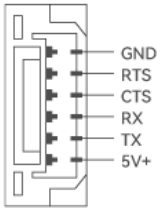
01 TELEM 1



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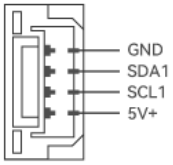
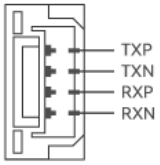
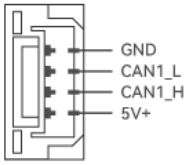


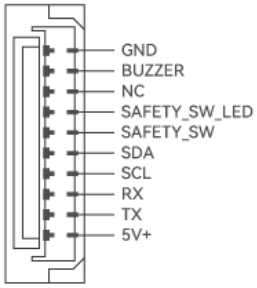
03 ETH



04 05 06 CAN 1



07 GPS & SAFETY



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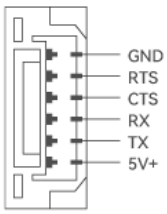

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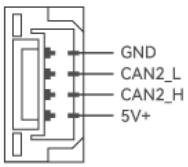
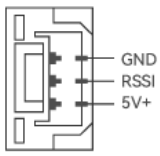
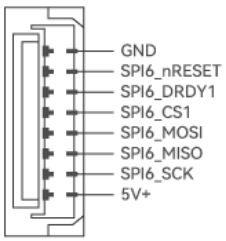


11 RSSI



12 SPI6



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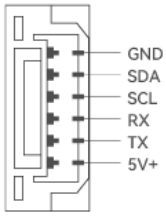

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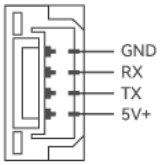

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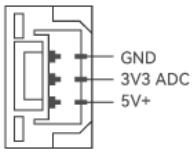

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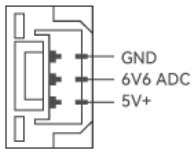
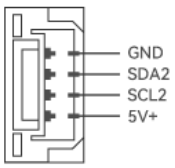
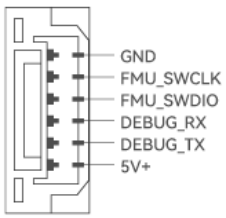


17 I2C 2



18 DEBUG (DSU)



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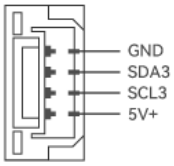
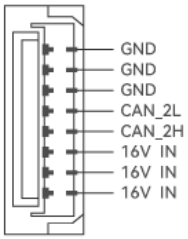
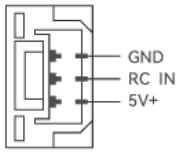


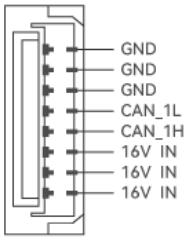
20 POWER C2



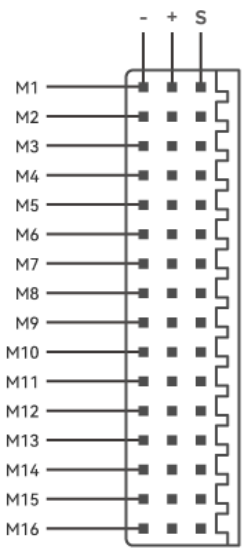
21 RC IN



22 POWER C1

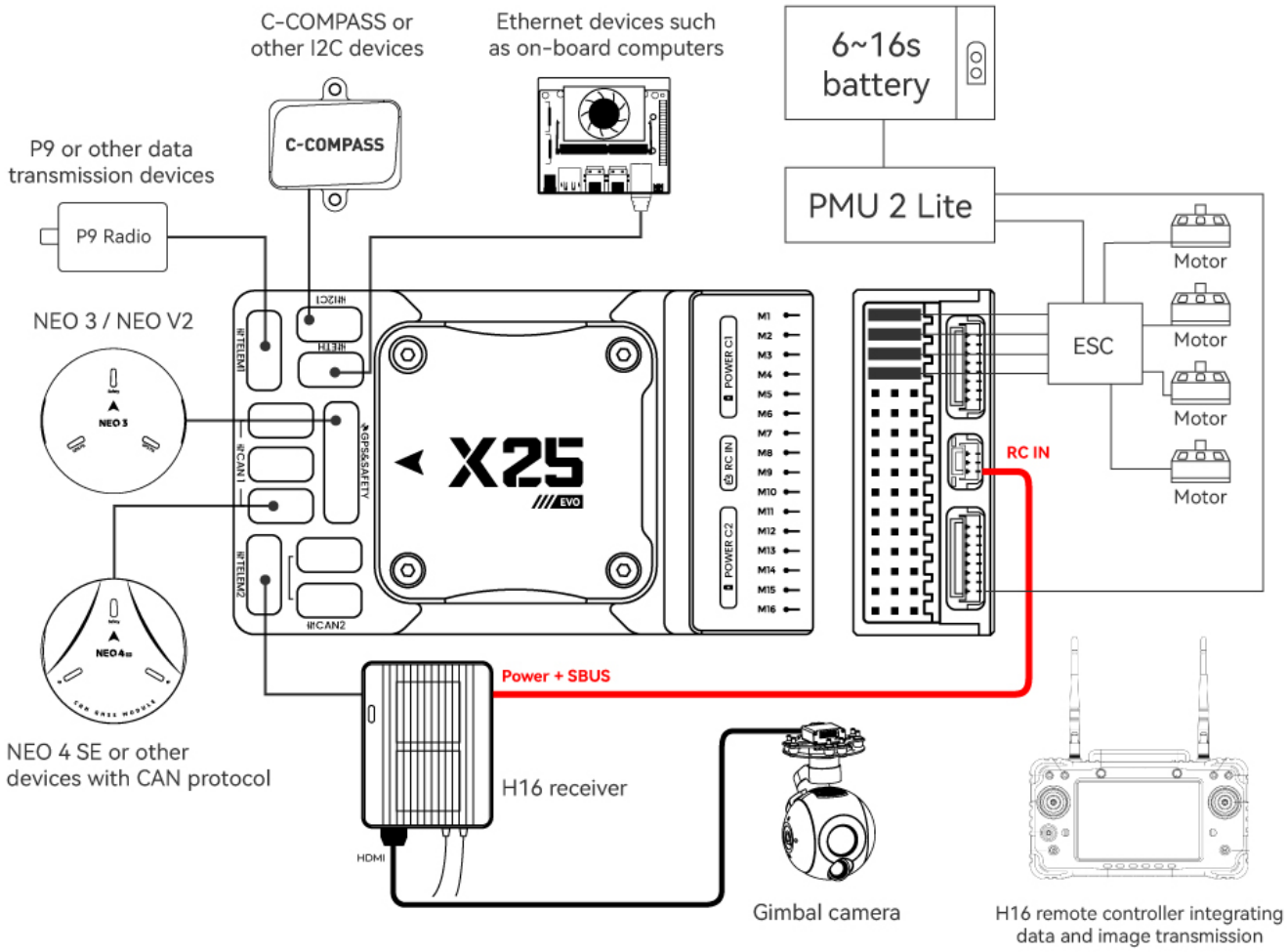


23 PWM



Hardware connection diagram

Take the quadcopter as an example:



Product connection

Interface	Connected accessories
POWER C1/C2	Connect the PMU2 Lite to this port; this port is used for connecting the DroneCAN power module.
M1~M16	PWM signal output ports, usable for controlling motors or servos; support 3.3V/5V PWM configuration.
RC IN	Connect remote controller receivers with one-way protocols (e.g., SBUS/DSM/PPM). Note: ELRS/CRSF receivers should be connected to any serial port, not RC IN.

RSSI	For connecting signal strength feedback modules.
GPS&SAFETY	Connect Neo-series GPS or C-RTK-series RTK; this port includes interfaces for GPS, safety switch, and buzzer.
GPS2	Usable for connecting additional GPS/RTK modules.
DEBUG (DSU)	For FMU chip debugging and reading debug device information; with ArduPilot firmware, it can be configured for other serial port functions.
ADC3V3	For analog level signal detection; the maximum detectable level signal is 3.3V.
ADC6V6	For analog level signal detection; the maximum detectable level signal is 6.6V.
TF CARD	Insert an SD card here to enable log storage functionality.
ETH	Ethernet port, usable for connecting Ethernet devices such as companion computers.
I2C1/2/3	Connect external I2C devices (e.g., external compasses) for communication between the controller and I2C devices.
TELEM1/TELEM2	Connect telemetry modules (for data transmission) to enable MAVLINK data interaction.
CAN1/2	For communication between the controller and DroneCAN devices (e.g., connecting NEO4 SE GPS).

Certification

Product has passed CE certification

Product has passed CE certification

CUAV has passed ISO 9001 quality management system certification

More information

CUAV official website：www.cuav.net

For more usage and assembly instructions, please visit the document center：doc.cuav.net